

This Page Is Inserted by IFW Operations
and is not a part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

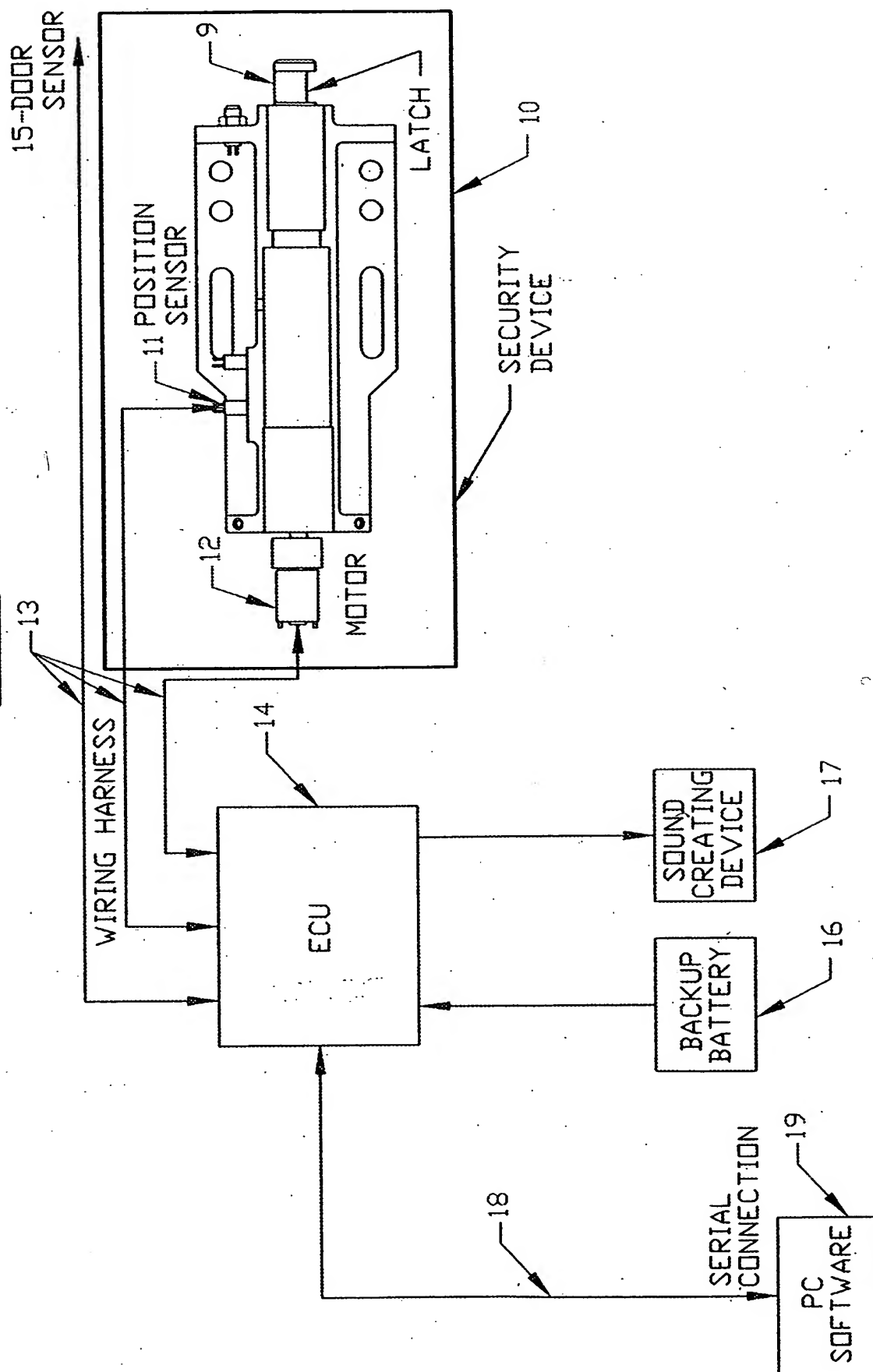
Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

**As rescanning documents *will not* correct images,
please do not report the images to the
Image Problem Mailbox.**

FIG 1



Electronic Control Unit

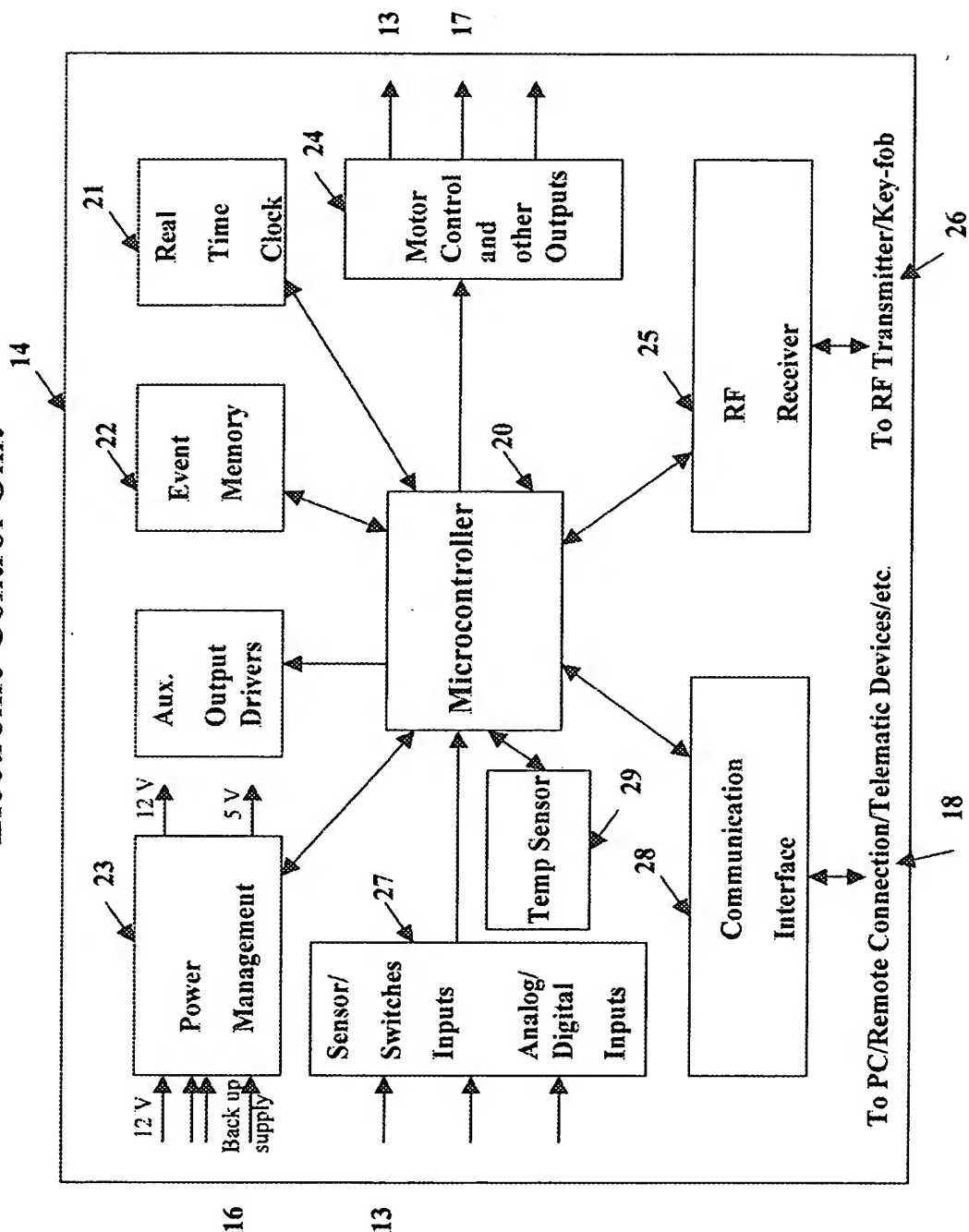


FIG. 2

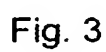
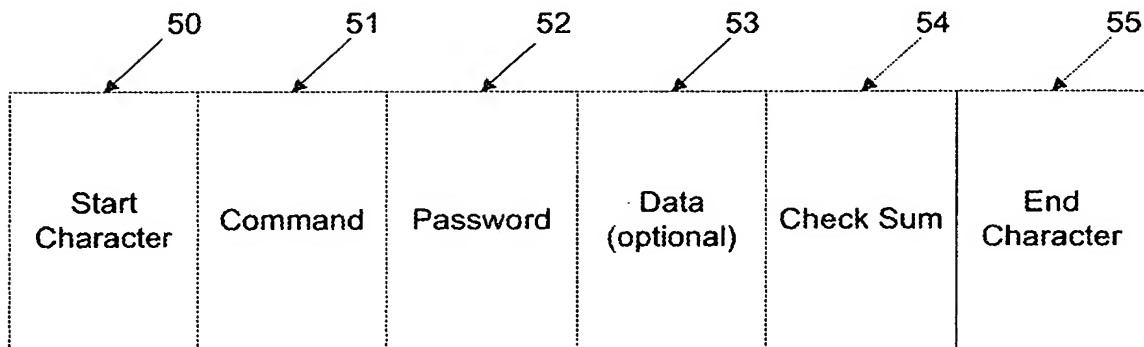
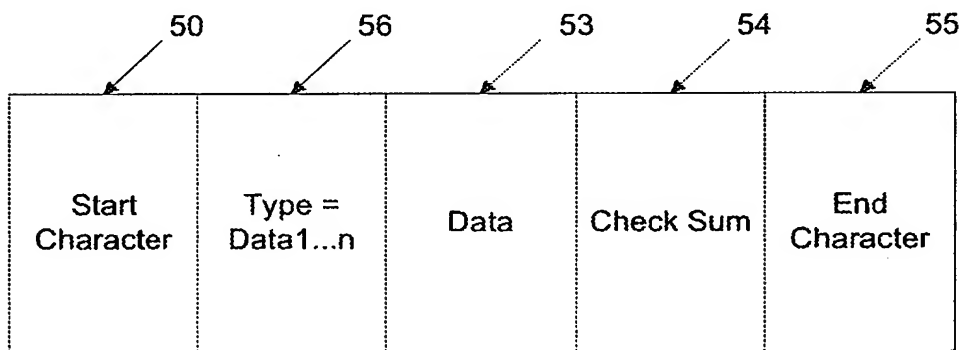


Fig. 3

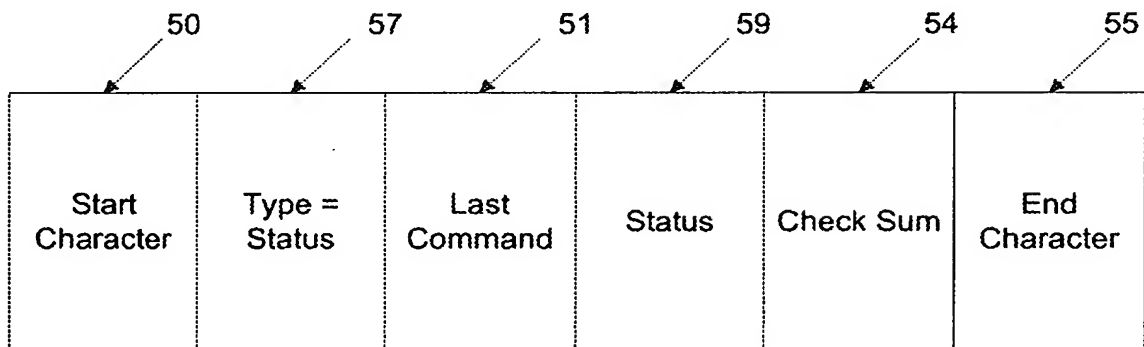
Fig. 4 Communication Protocol



60 → Command Packet from a PC



61 → Data Packet



62 → Status Packet

71 72 73 74

70

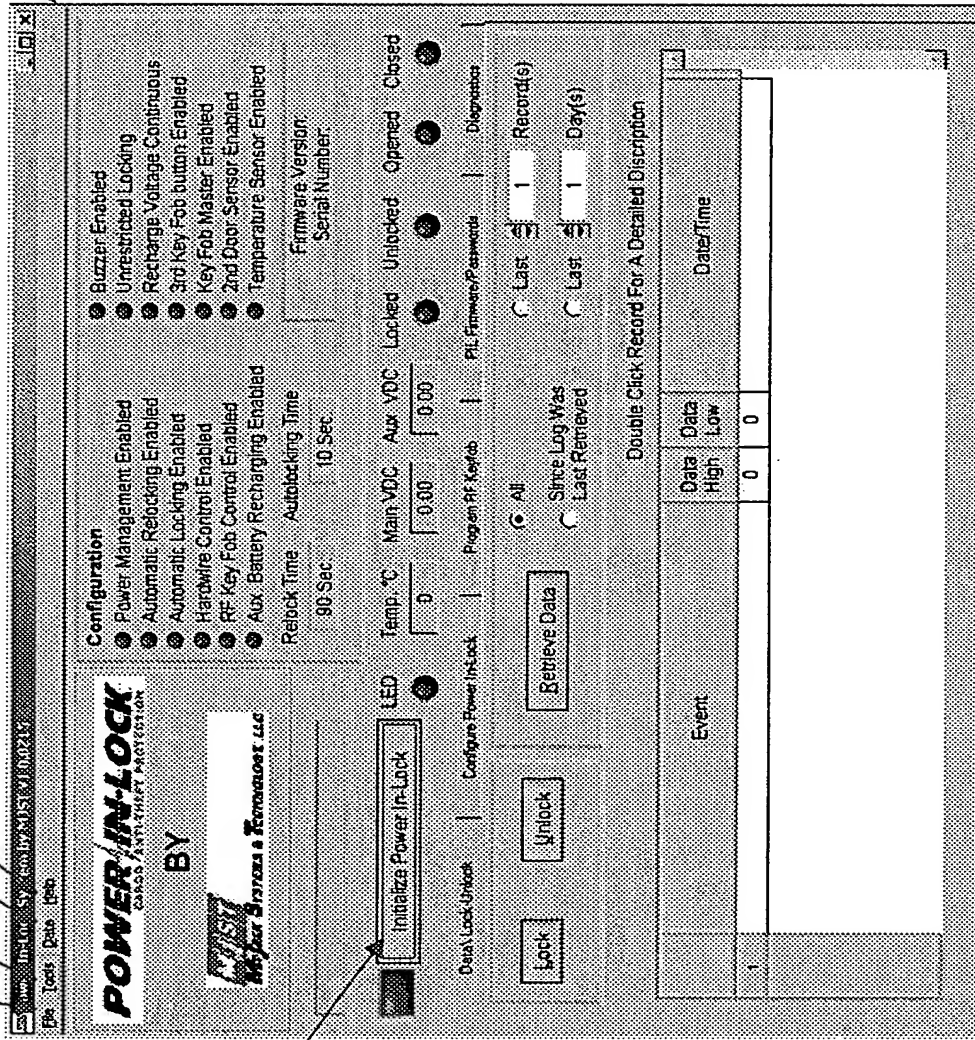


FIG. 5 Data\Lock-Unlock screen – without ECU – PC communication

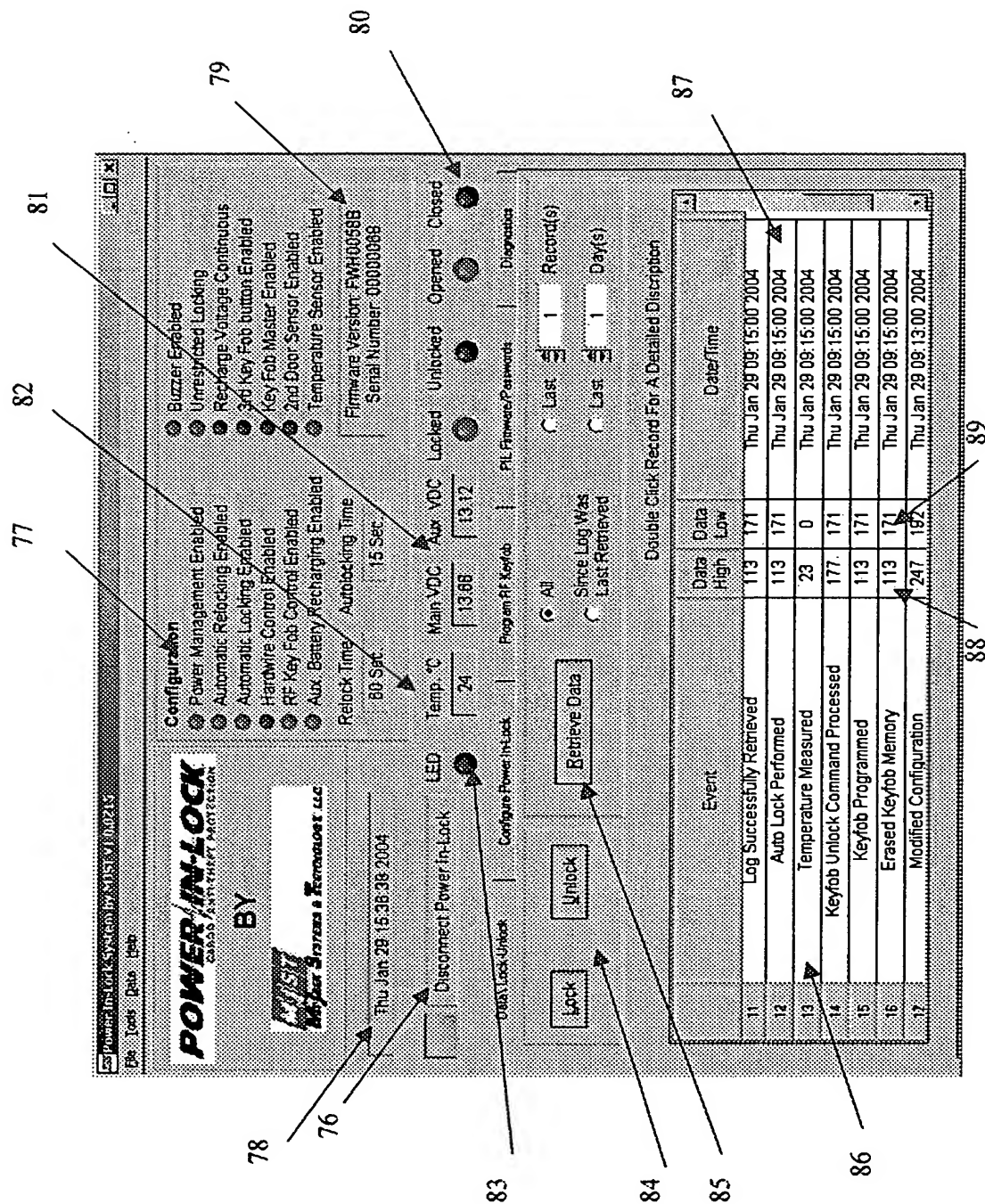


FIG. 6 Data/Lock-Unlock screen when ECU – PC communication is in progress

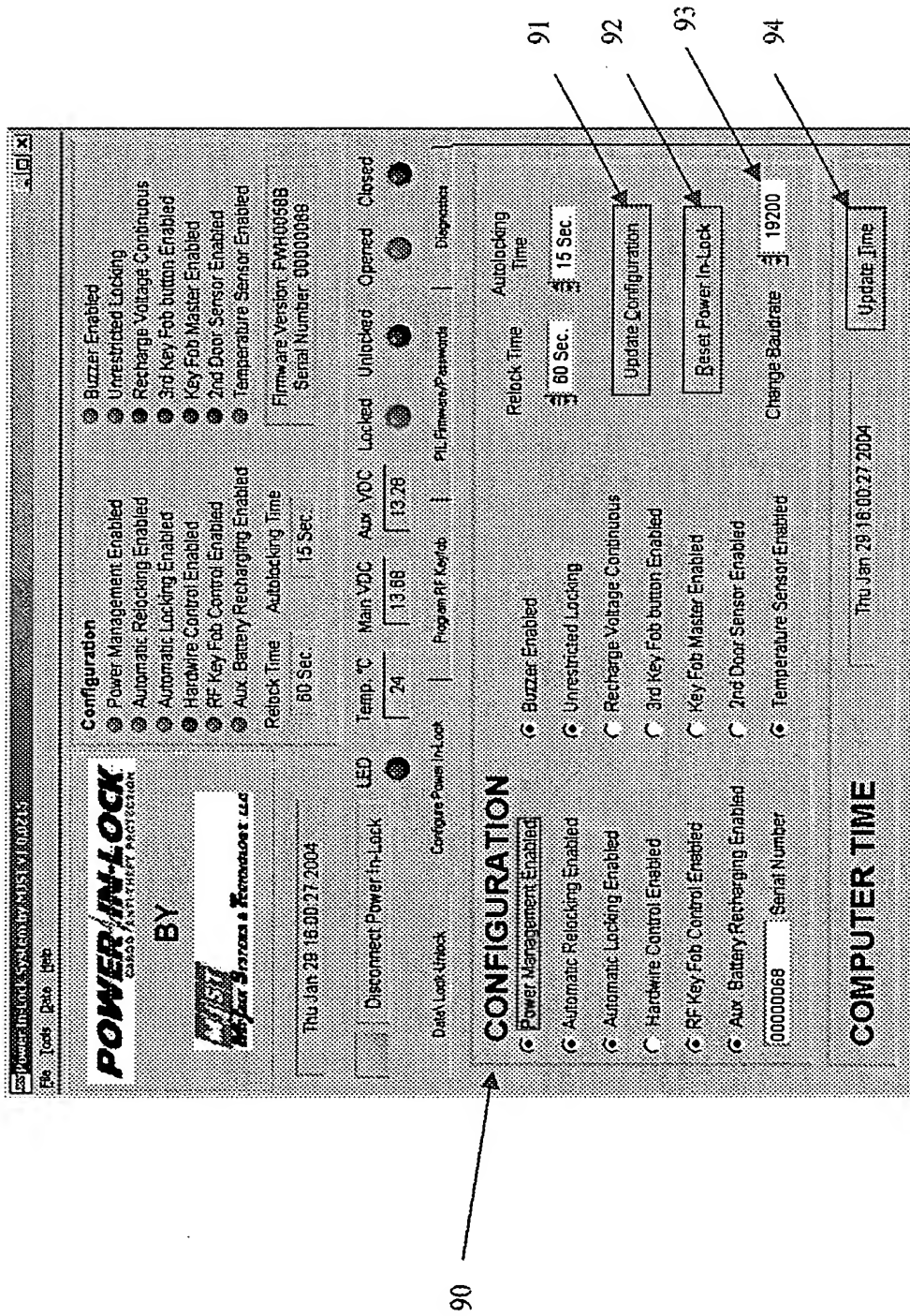


FIG. 7 Configure screen when ECU – PC communication is in progress

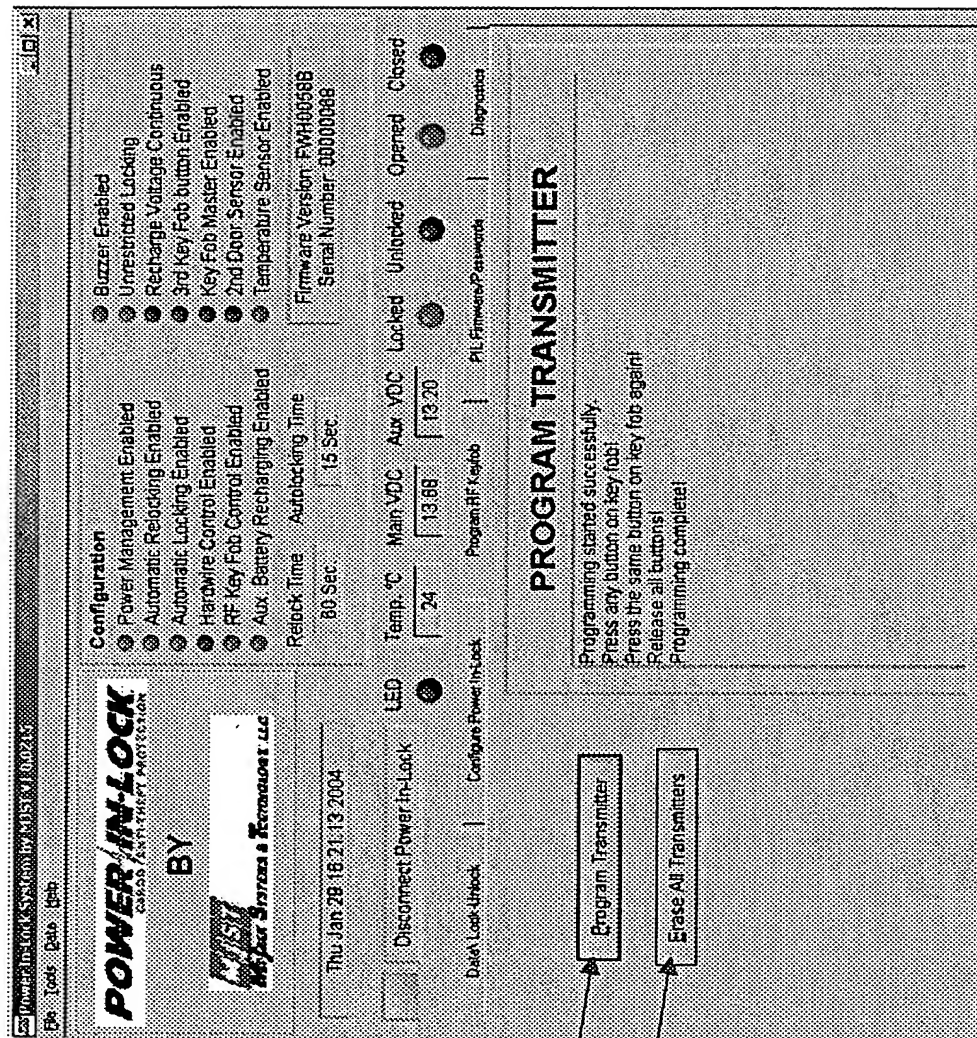


FIG. 8 Program RF key-fob screen when ECU – PC communication is in progress

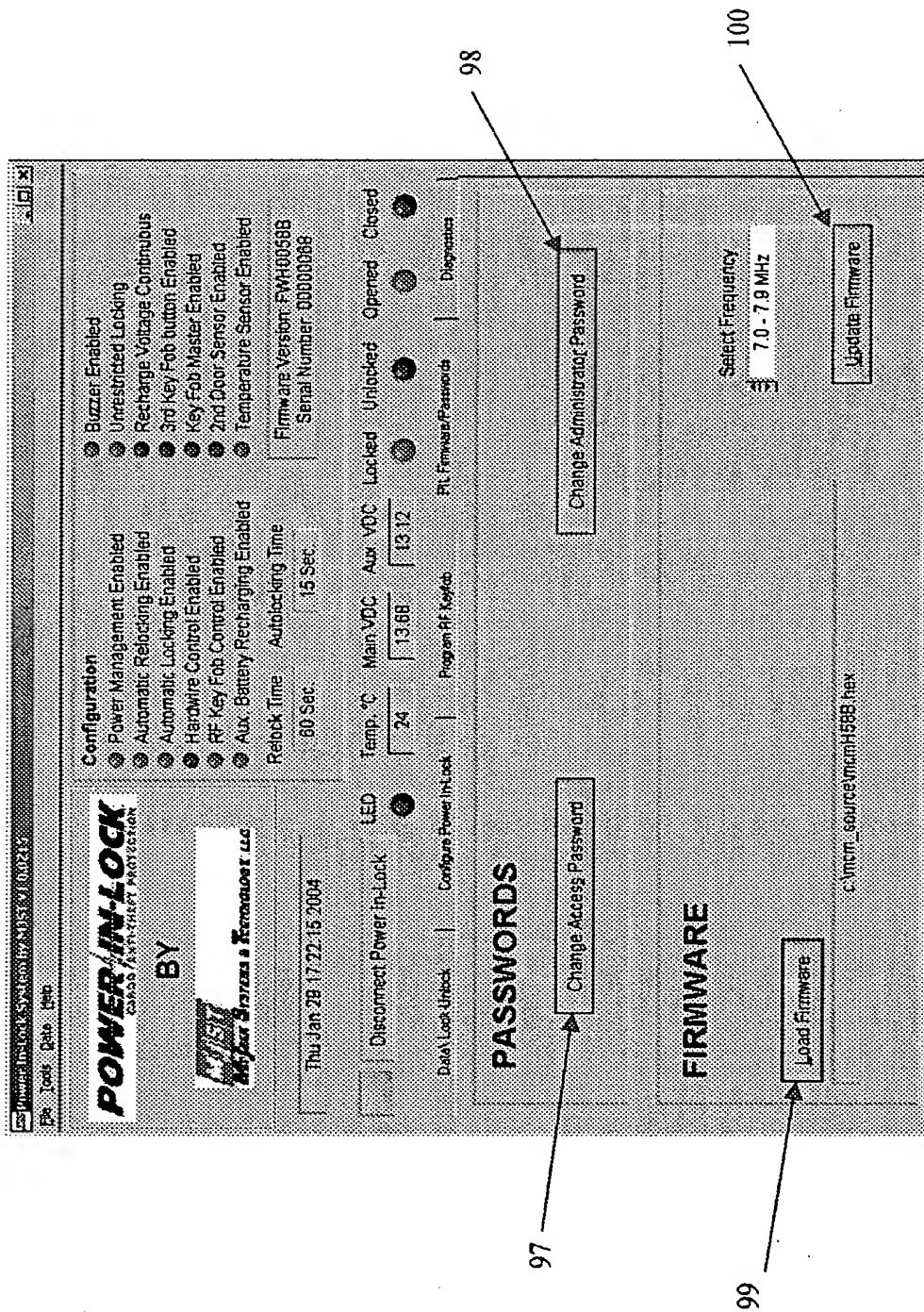


FIG. 9 Firmware/Passwords screen when ECU – PC communication is in progress

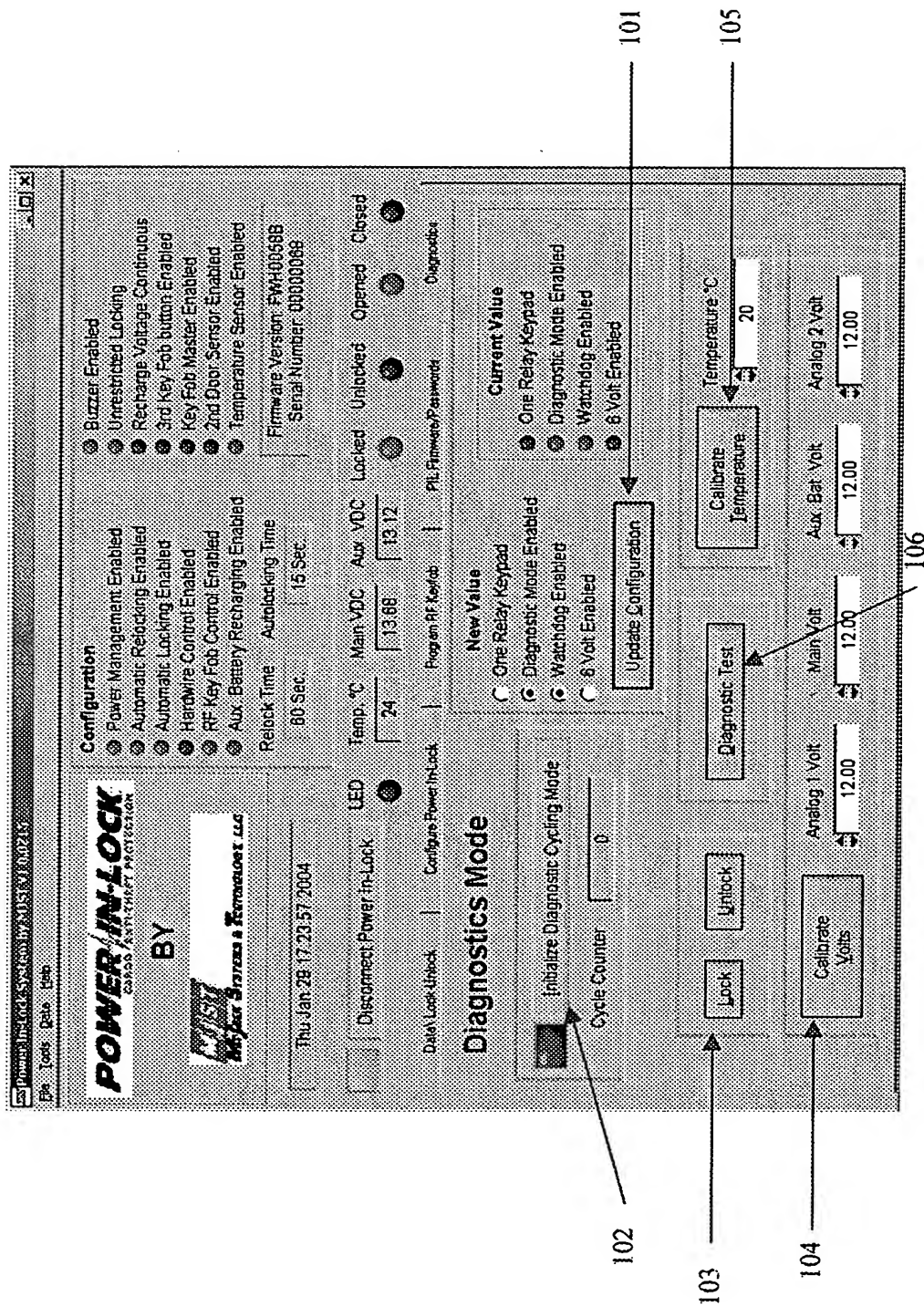


FIG.10 Diagnostics screen when ECU – PC communication is in progress

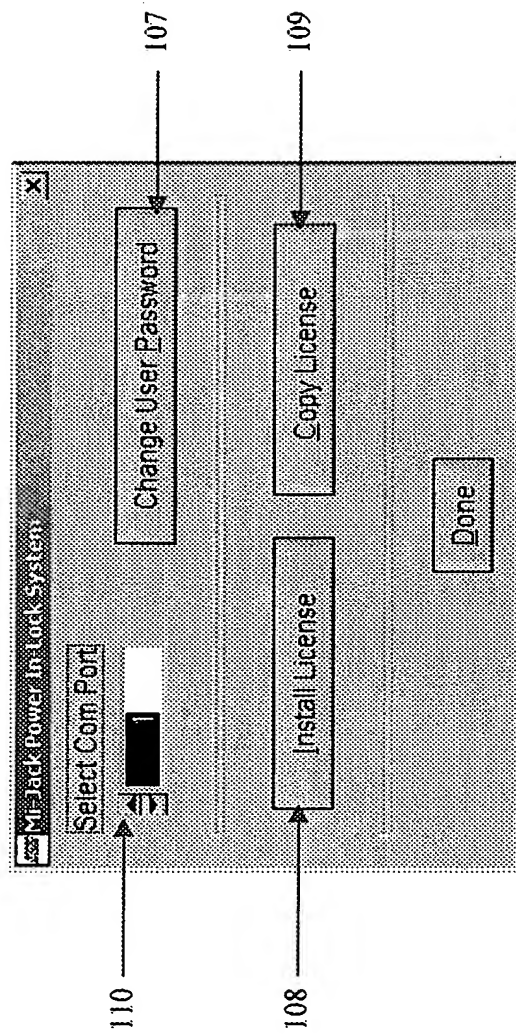


FIG.11 Typical setup screen

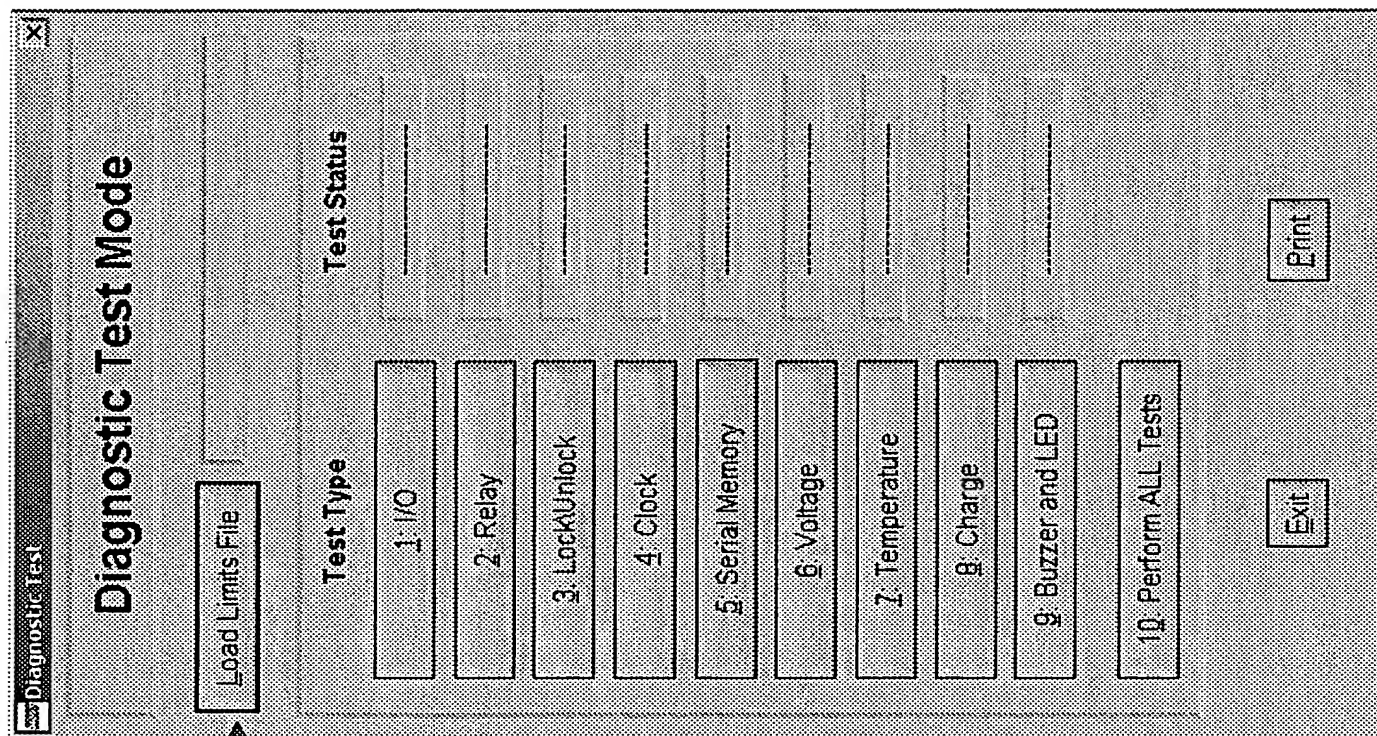


FIG.12
Diagnostic Test
screen

Main Routine

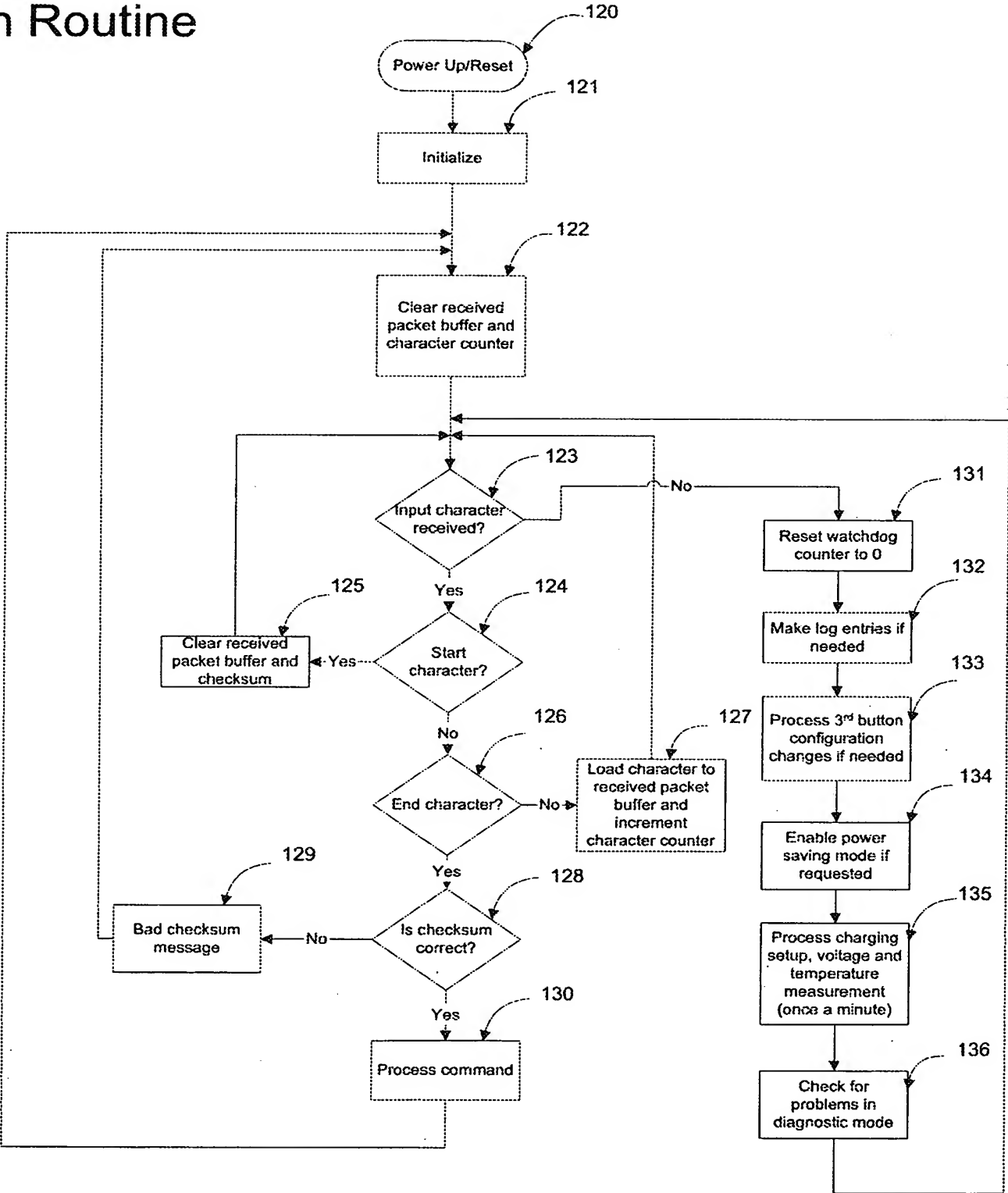


Fig. 13

Interrupt Routine

Executed every 40 msec

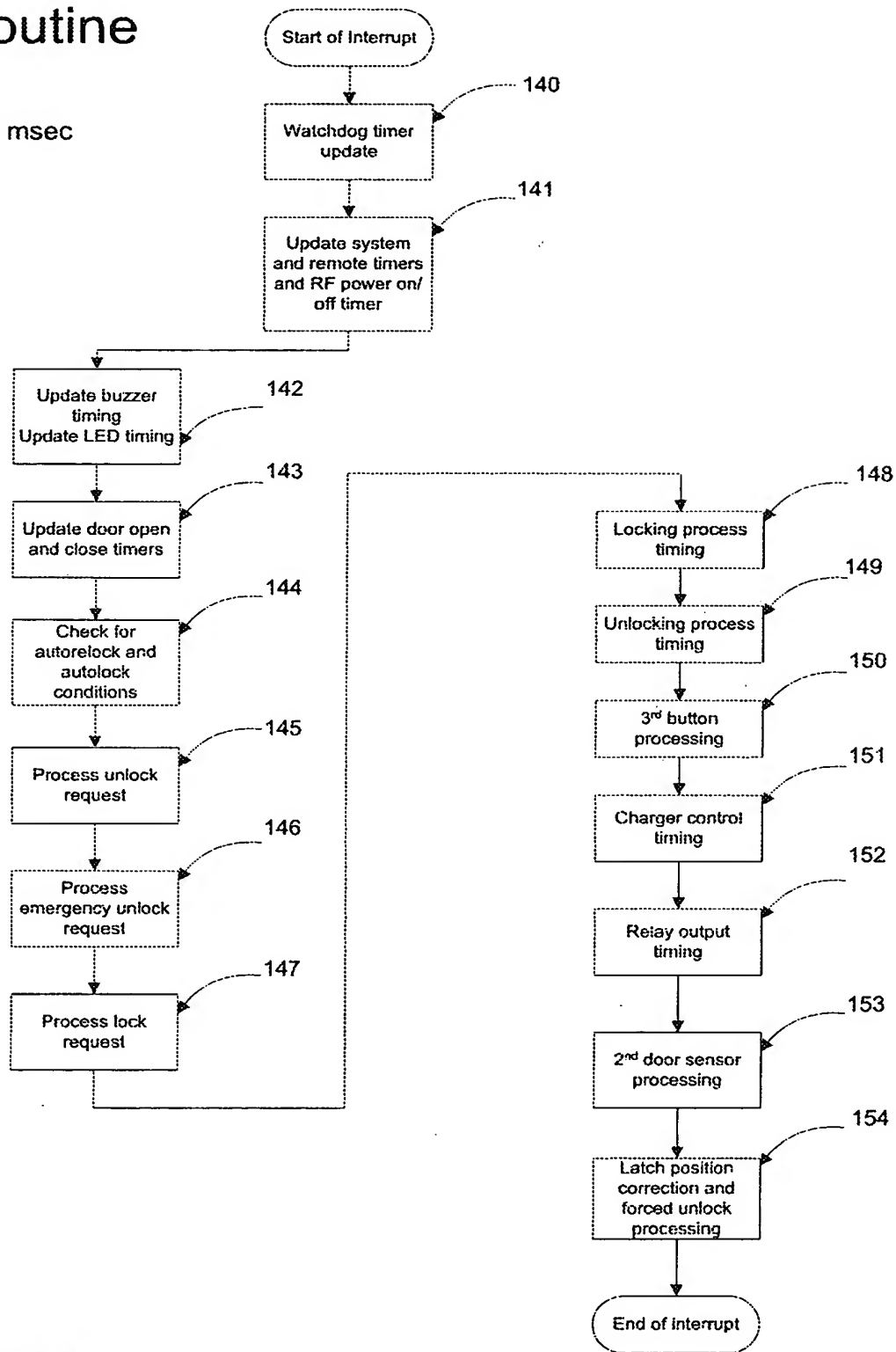


Fig. 14

Fig. 15
Corrupted header correction

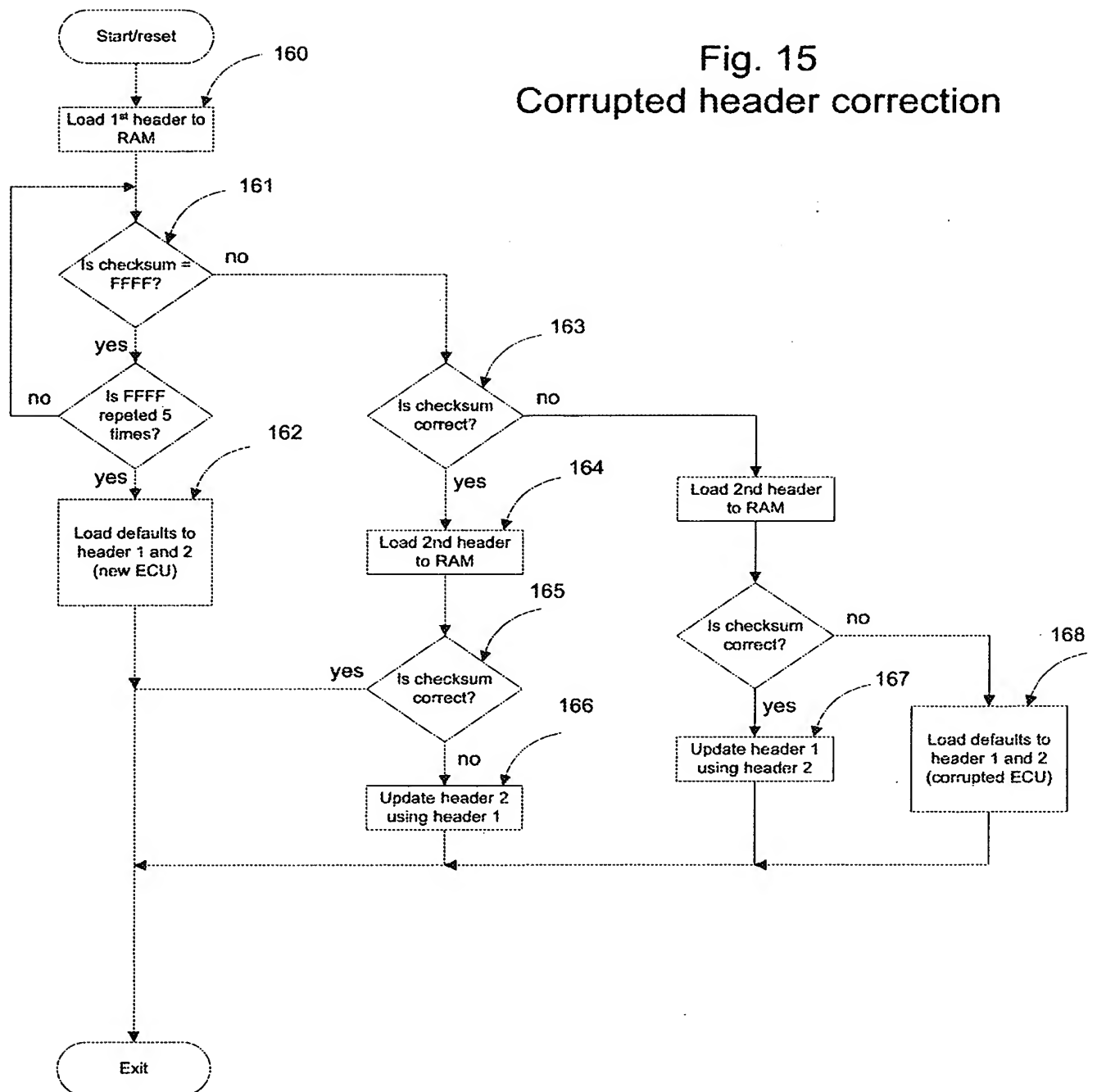


Fig. 16 Log Entries

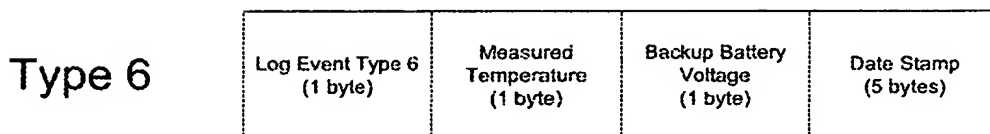
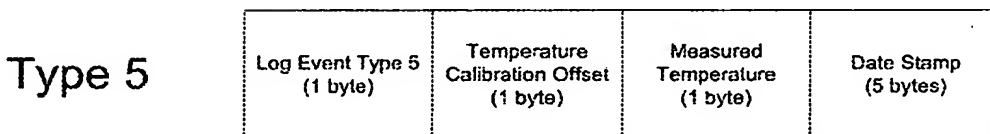
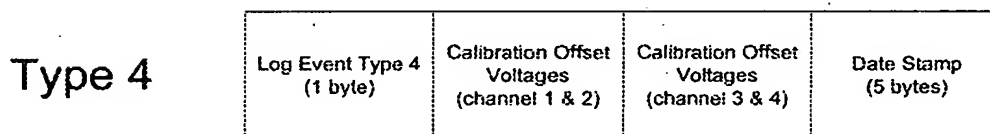
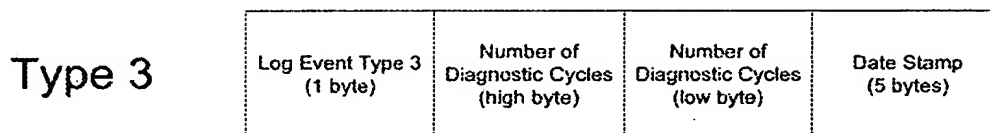
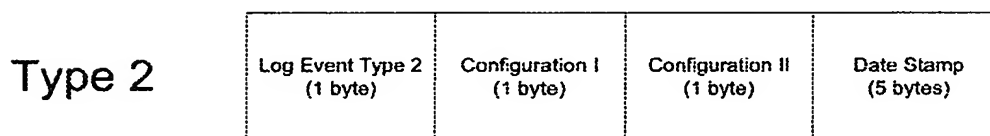
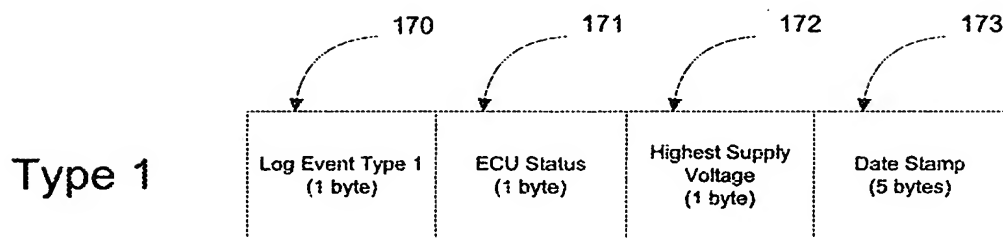


Fig. 17 Software Licensing
Password Locations

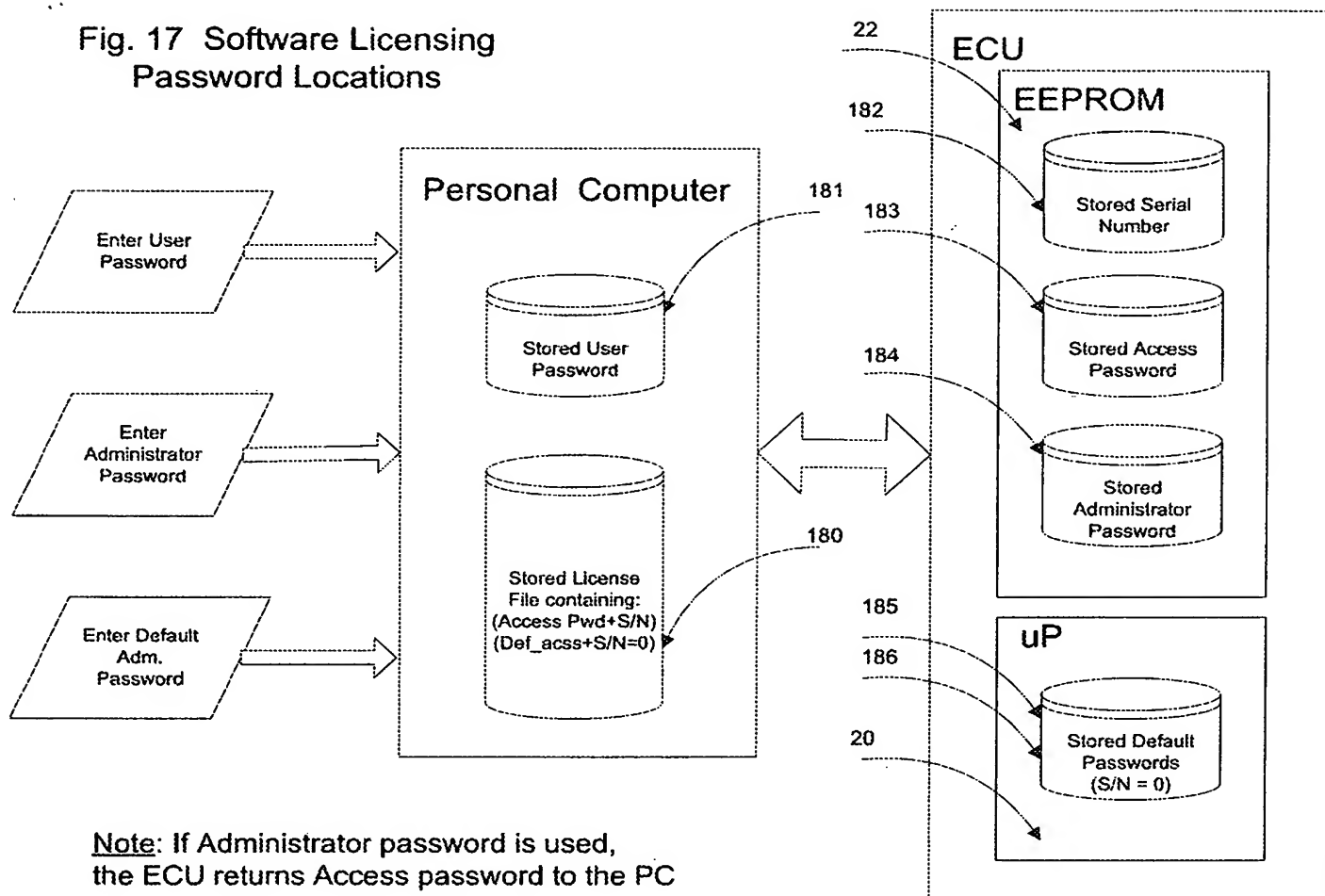
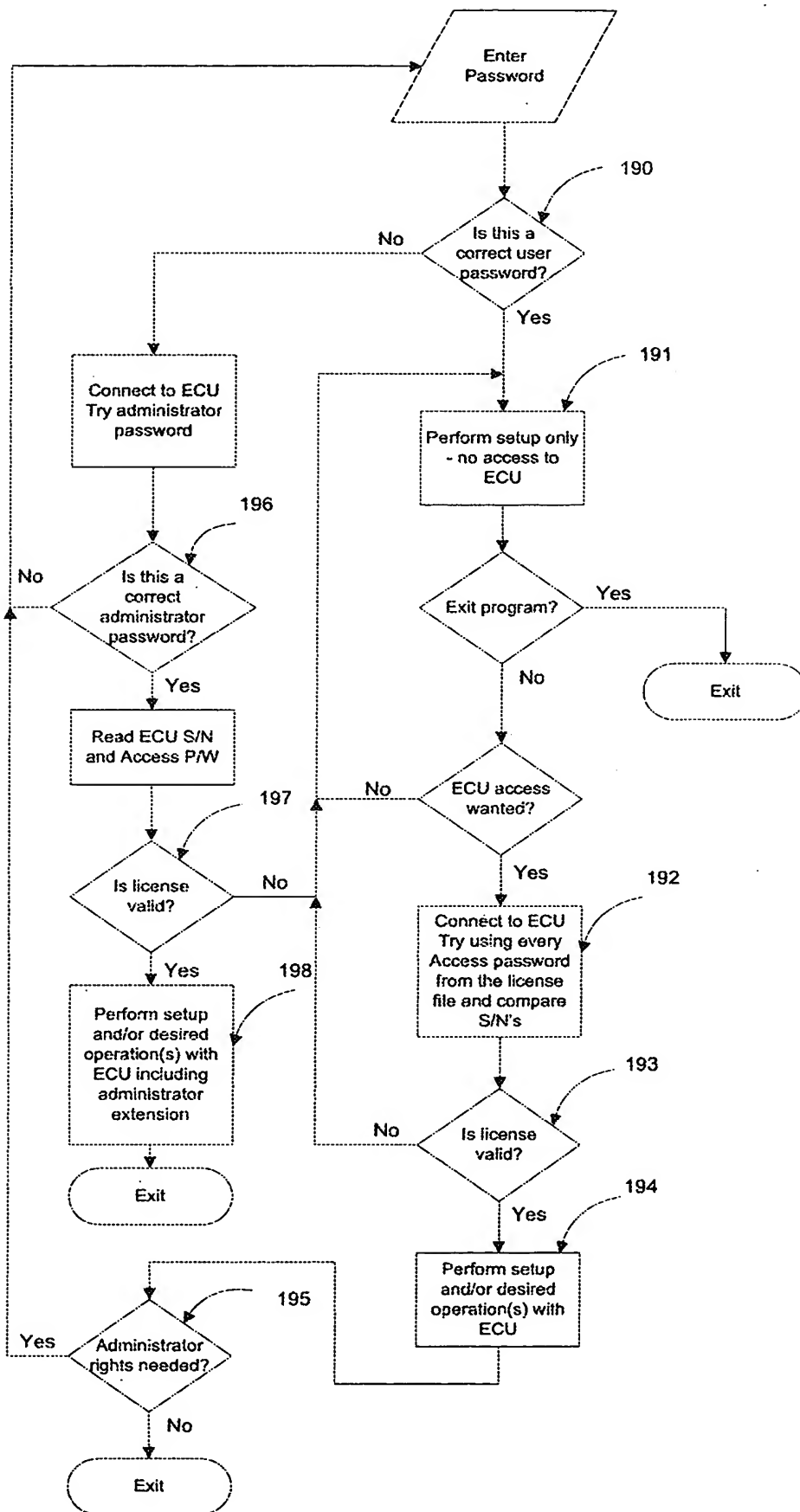


Fig. 18
Regular User
and
Administrator
Licensing
(no diagnostics)



PIL PASSWORDS w/o diagnostics

FUNCTION	USER PASSWORD w/o license	ADM. PASSWORD w/o license	USER PASSWORD w/ license	USER PASSWORD w/default license	ADM. PASSWORD w/ license	DEF. ADM. PASSWORD w/default license
Open PC program	X	X	X	X	X	X
Configure com port	X	X	X	X	X	X
Install license file	X	X	X	X	X	X
Change user password	X	X*	X	X	X*	X*
Check ECU serial number			X	X	X	
Check ECU firmware version			X	X	X	X
Check system status			X	X	X	X
Read system voltages			X	X	X	X
Read temperature			X	X	X	X
Check/modify configuration			X	X**	X	X**
Check/modify real time clock			X	X	X	X
Send software reset			X	X	X	X
Change ECU baud rate			X	X	X	X
Erase RF transmitter memory			X	X	X	X
Program RF transmitter			X	X	X	X
Lock and unlock			X	X	X	X
Retrieve log events			X		X	
Export log events to .txt file			X		X	
Change Access pwd (ECU & lic. file)					X	
Change Administrator password					X	
Save updated license to disk					X	
Update ECU firmware					X	X

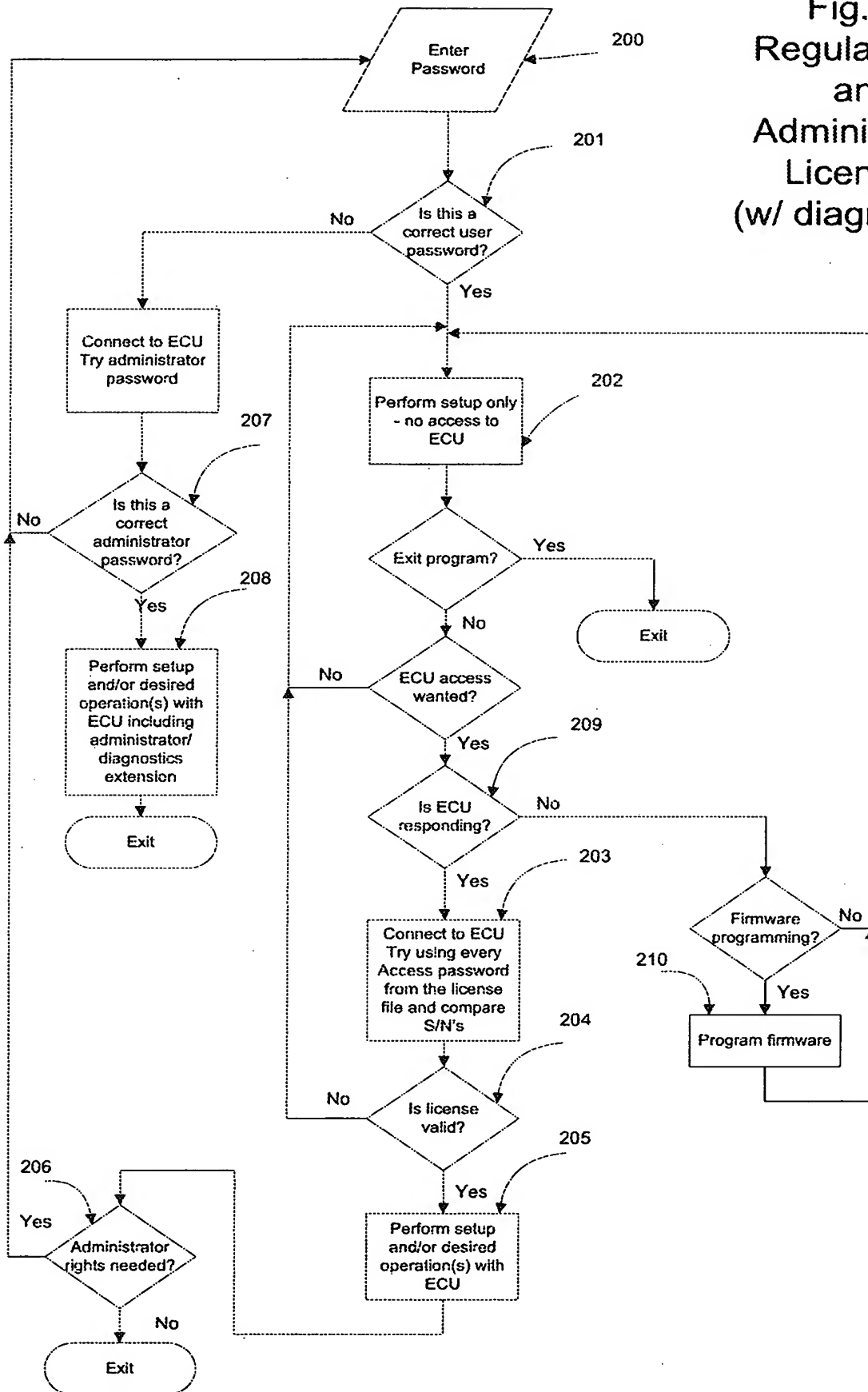
NOTE: default license is used when EEPROM memory is corrupted (default Access Password + S/N = 0)

X* - if user password is known

X** - read only

Fig. 19

Fig. 20
Regular User
and
Administrator
Licensing
(w/ diagnostics)



PIL PASSWORDS with diagnostics enabled

FUNCTION	USER PASSWORD w/o license	USER PASSWORD w/license	USER PASSWORD w/default license	ADM. PASSWORD confirmed	DEF. ADM. PASSWORD confirmed - EEPROM corrupted
Open PC program	X	X	X	X	X
Configure com port	X	X	X	X	X
Install license file	X	X	X	X	X
Change user password	X	X	X	X***	X***
Check ECU serial number		X		X	
Check ECU firmware version		X	X	X	X
Check system status		X	X	X	X
Read system voltages		X	X	X	X
Read temperature		X	X	X	X
Check/modify configuration		X	X	X	X
Check/modify real time clock		X	X****	X	X****
Send software reset		X	X	X	X
Change ECU baud rate		X	X	X	X
Erase RF transmitter memory		X	X	X	X
Program RF transmitter		X	X	X	X
Lock and unlock		X	X	X	X
Retrieve log events		X	X	X	
Export log events to .txt file		X		X	
Change Access pwd (ECU & lic. file)				X	
Change Administrator password				X	
Save updated license to disk				X	
Update ECU firmware	X*			X**	X**
Check/modify additional config. items				X	X****
Run diagnostic cycling				X	X
Perform diagnostic lock and unlock				X	X
Calibrate temperature and voltages				X	
Run diagnostic test				X	
Repair EEPROM				X	X

NOTE: default license is used when EEPROM memory is corrupted (default Access Password + S/N = 0)

- X* - if ECU is not programmed/not responding
- X** - if ECU is already programmed
- X*** - if user password is known
- X**** - read only

Fig. 21